

# Claims

[c1] What is claimed is:

1. A scanner comprising:

a housing;

a transparent platform installed on the housing;

a shaft installed inside the housing; and

a scanning module installed inside the housing and on the shaft in a movable manner comprising:

a sensing module for scanning a document on the transparent platform and transforming it into a digital signal; and

a sensor carriage comprising:

a base for carrying the sensing module; and

a buffer pad connected to the base in a rotatable manner for contacting the transparent platform and fixing the sensing module in the sensor carriage.

[c2] 2. The scanner of claim 1, further comprising a buffer component installed under the scanning module and connected to the shaft in a movable manner for elastically supporting the scanning module and ensuring the scanning module is close to the transparent platform.

[c3] 3. The scanner of claim 1, wherein the buffer component

is a spring mechanism.

- [c4] 4. The scanner of claim 1, wherein the sensor carriage further comprises an elastic component installed on the bottom of the base for vertically supporting the sensing module.
- [c5] 5. The scanner of claim 4, wherein the elastic component is a fragment.
- [c6] 6. The scanner of claim 4, wherein the elastic component is a spring.
- [c7] 7. The scanner of claim 1, further comprising at least one wearing spacer installed on the buffer pad for contacting the transparent platform.
- [c8] 8. The scanner of claim 7, wherein the wearing spacer is a flange of wear-resisting material.
- [c9] 9. The scanner of claim 1, wherein the sensing module comprises a contact image sensor (CIS), a plurality of charge coupled devices, or a plurality of complementary metal-oxide semiconductors.
- [c10] 10. A scanner comprising:
  - a housing;
  - a transparent platform installed on the housing;
  - a shaft installed inside the housing; and

a scanning module installed inside the housing and on the shaft in a movable manner for scanning a document on the transparent platform; and  
a buffer component connected to the scanning module in union-forming structure and connected to the shaft in a movable manner for elastically supporting the scanning module and ensuring the scanning module is close to the transparent platform.

- [c11] 11. The scanner of claim 10, further comprising a sensing module for scanning a document on the transparent platform and transforming it into a digital signal, and a sensor carriage comprising a base for carrying the sensing module and a buffer pad connected to the base in a rotatable manner for contacting the transparent platform and fixing the sensing module in the sensor carriage.
- [c12] 12. The scanner of claim 11, further comprising at least one wearing spacer installed on the buffer pad for contacting the transparent platform.
- [c13] 13. The scanner of claim 12, wherein the wearing spacer is a flange of wear-resisting material.
- [c14] 14. The scanner of claim 11, wherein the sensor carriage further comprises an elastic component installed on the bottom of the base for vertically supporting the sensing

module.

- [c15] 15. The scanner of claim 14, wherein the elastic component is a fragment.
- [c16] 16. The scanner of claim 14, wherein the elastic component is a spring.
- [c17] 17. The scanner of claim 11, wherein the sensing module comprises a contact image sensor (CIS).
- [c18] 18. The scanner of claim 10, wherein the buffer component is a spring mechanism.
- [c19] 19. The scanner of claim 10, wherein the buffer component comprises:
  - a semicircular elastic body for connecting with the shaft;
  - an elastic body installed above the semicircular elastic body for supporting the scanning module upwardly, making the scanning module close to the transparent platform, and positioning the scanning module on the shaft aligned with the semicircular elastic body.
- [c20] 20. The scanner of claim 19, wherein the elastic body comprises:
  - a circular elastic body installed above the semicircular elastic body for vertically supporting the scanning module and ensuring the scanning module is close to the

transparent platform aligned with the semicircular elastic body; and  
two arched elastic bodies for positioning the scanning module on the shaft.